



StorTrends® 3200 Set Up Guide (StorTrends iTX version 2.7)

MAN-3200-SG
06/21/07

Thank You

Thank you for purchasing the StorTrends® 3200 storage appliance. Please take a few minutes to review this set up guide before beginning the installation process. If you require a further explanation of any item covered in this guide, please refer to the installation instructions on your CD.

This manual is written for the end-user to get up and running with the unit as quickly as possible. Installation and maintenance should be performed by experienced technicians only.

Hardware Installation

This section provides a quick setup checklist to get your StorTrends® 3200 Storage Appliance up and running. Following the steps in the order given should enable you to have the system operational within a minimal amount of time.

Note: Follow the steps in the order given to complete the installation process in a minimal amount of time. Read this section in its entirety before you begin the installation procedure outlined in this section.

Unpack the StorTrends® 3200 Storage Appliance

You should inspect the box the StorTrends® 3200 Storage Appliance was shipped in and note if it was damaged in any way. If the server itself shows damage, you should file a damage claim with the carrier who delivered it.

Decide on a suitable location for the rack unit that will hold the StorTrends® 3200 Storage Appliance. It should be situated in a clean, dust-free area that is well ventilated. Avoid areas where heat, electrical noise and electromagnetic fields are generated. You will also need it placed near a grounded power outlet. Read the Rack and Server Precautions in the next section.

Preparing for Setup

The box the StorTrends® 3200 Storage Appliance was shipped in includes the following:

- a 3200 Chassis
- Two Power Cords
- Rails
- Rail Screws

Note: Your StorTrends® 3200 may or may not ship with everything listed in the *Retail Packing List*. Contact your AMI authorized reseller to find out what is shipped with your StorTrends® 3200 storage appliance if the contents do not match the ones listed in this document.

Choosing a Setup Location

- Leave enough clearance in front of the rack to enable you to open the front door completely (~25 inches).
- Leave approximately 30 inches of clearance in the back of the rack to allow for sufficient airflow and ease in servicing.

Warning

Rack Precautions

- *Ensure that the leveling jacks on the bottom of the rack are fully extended to the floor with the full weight of the rack resting on them.*
- *In a single rack installation, stabilizers should be attached to the rack.*
- *In multiple rack installations, the racks should be coupled together.*
- *Always make sure the rack is stable before extending a component from the rack.*
- *You should extend only one component at a time - extending two or more simultaneously may cause the rack to become unstable.*

Server Precautions

- *Review the General Safety Precautions.*
- *Determine the placement of each component in the rack before you install the rails.*
- *Install the heaviest server components on the bottom of the rack first, and then work up.*
- *Use a regulating uninterruptible power supply (UPS) to protect the server from power surges, voltage spikes and to keep your system operating in case of a power failure.*
- *Allow the power supply units and hot plug Serial ATA drive to cool before touching them.*
- *Always keep the rack's front door and all panels and components on the servers closed when not servicing to maintain proper cooling.*

General Safety Precautions

Warning

General Safety Precautions

- *Keep the area around the StorTrends® 3200 Storage Appliance clean and free of clutter.*
- *The StorTrends® 3200 Storage Appliance weighs approximately 38 lbs. (17.3 kg) when fully loaded. When lifting the system, two people at either end should lift slowly with their feet spread out to distribute the weight. Always keep your back straight and lift with your legs.*
- *Do not open the chassis top cover.*
- *While working on the system, do not wear loose clothing such as neckties and unbuttoned shirt sleeves, which can come into contact with electrical circuits or be pulled into a cooling fan.*
- *Remove any jewelry or metal objects from your body, which are excellent metal conductors that can create short circuits and harm you if they come into contact with printed circuit boards or areas where power is present.*

Rack Mounting Considerations

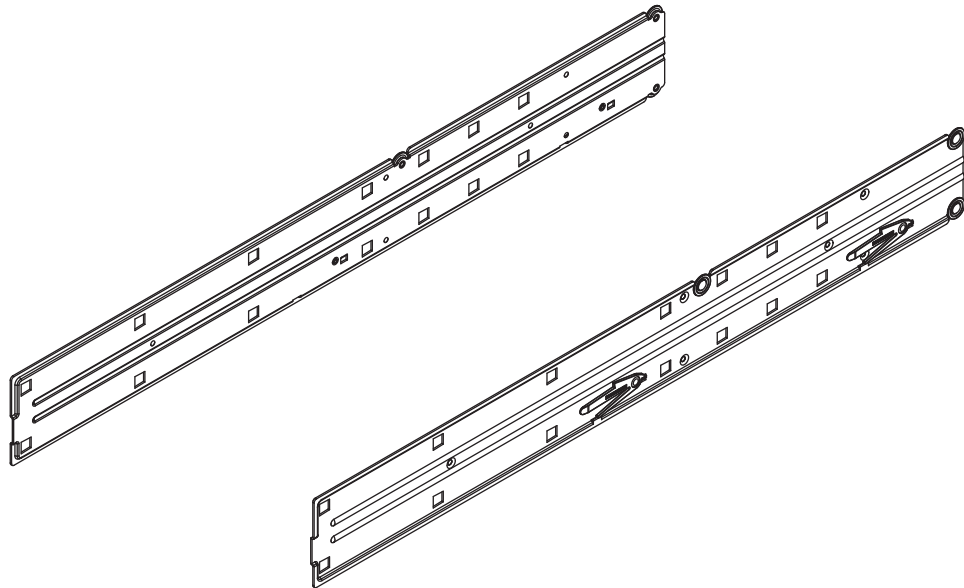
Feature	Description
Ambient Operating Temperature	If installed in a closed or multi-unit rack assembly, the ambient operating temperature of the rack environment may be greater than the ambient temperature of the room. Therefore, consideration should be given to installing the equipment in an environment compatible with the manufacturer's maximum rated ambient temperature (T _{mra}).
Reduced Airflow	Equipment should be mounted into a rack so that the amount of airflow required for safe operation is not compromised.
Mechanical Loading	Equipment should be mounted into a rack so that a hazardous condition does not arise due to uneven mechanical loading.
Circuit Overloading	Consideration should be given to the connection of the equipment to the power supply circuitry and the effect that any possible overloading of circuits might have on over current protection and power supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
Reliable Ground	A reliable ground must be maintained at all times. To ensure this, the rack itself should be grounded. Particular attention should be given to power supply connections other than the direct connections to the branch circuit (for example, the use of power strips, and so on.).

Installing the System into a Rack

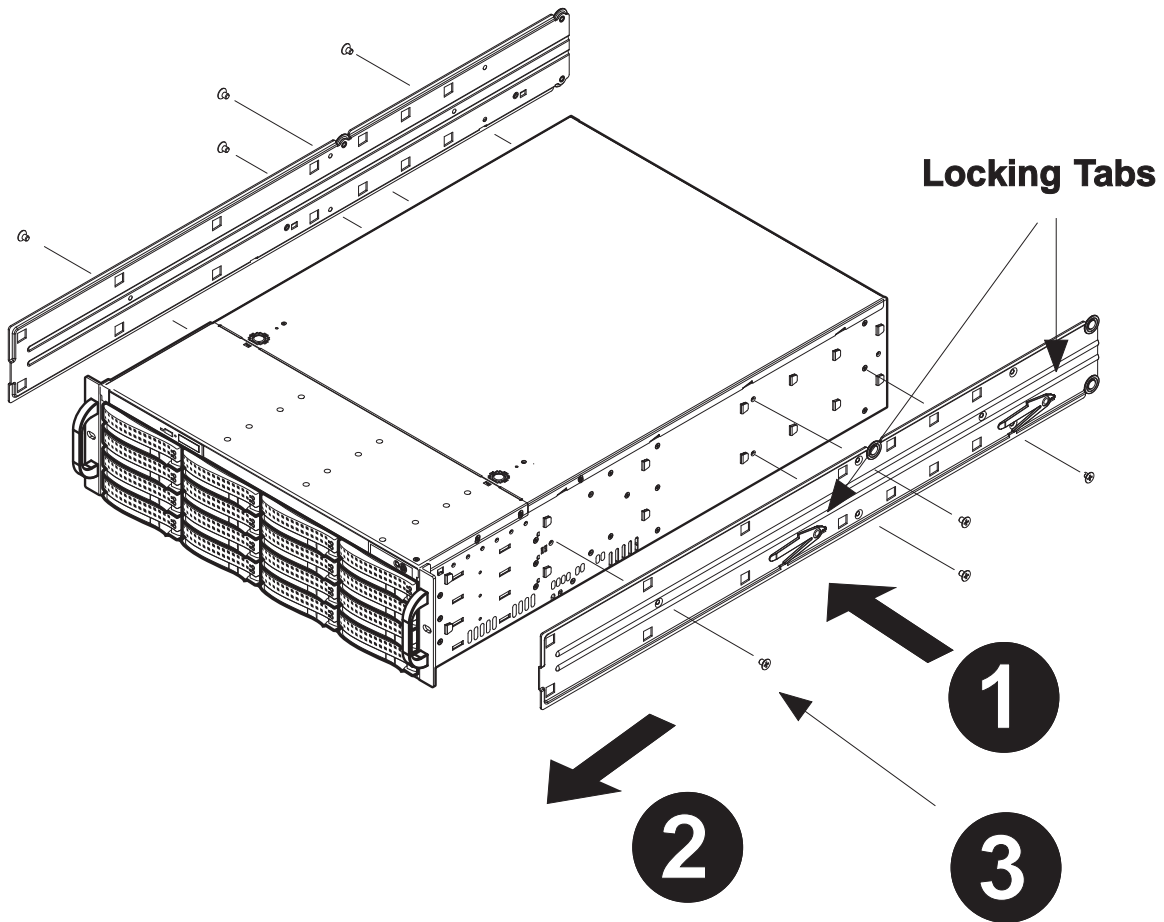
This section provides information on installing the StorTrends 3200 into a rack with the rack rails provided. If the StorTrends 3200 has already been mounted into a rack, you can skip this step.

There are a variety of rack units on the market that may mean the assembly procedure will differ slightly. You should also refer to the installation instructions that came with the rack unit you are using.

Inner Rack Rails



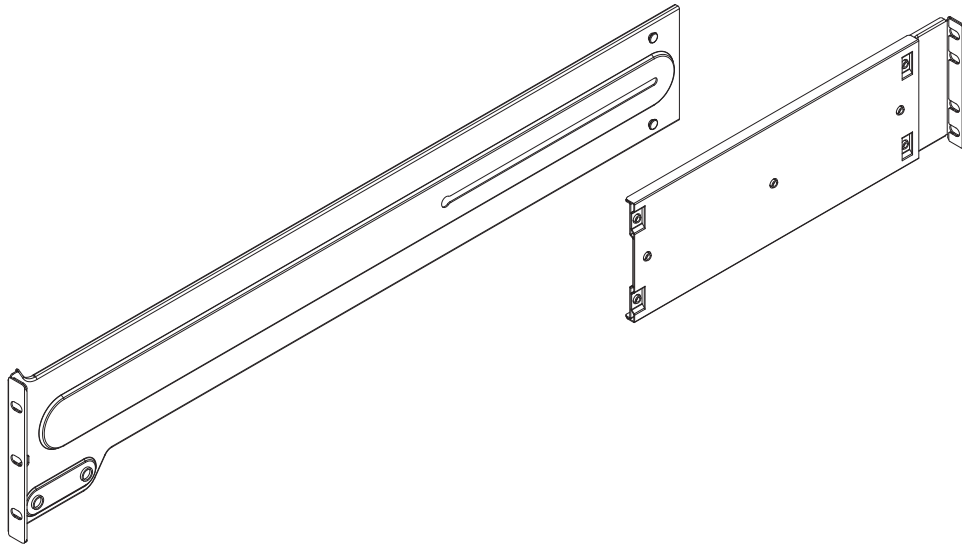
Installing the Inner Rack Rails



To install the rack rails

Steps	Description
1	Place the inner rack extensions on the side of the chassis aligning the hooks of the chassis with the rail extension holes.
2	Slide the extension toward the front of the chassis.
3	Secure the chassis with 4 screws as illustrated.
4	Repeat steps 1-3 for the other inner rail.

Installing the Chassis into the Server Rack



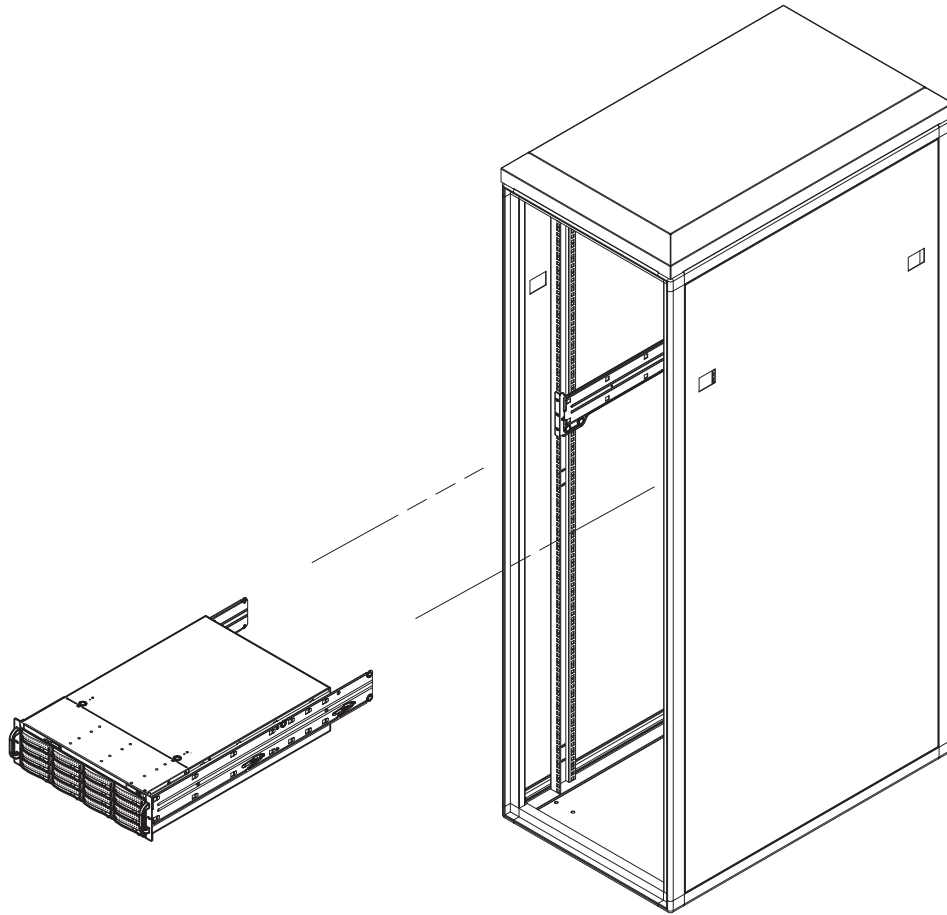
Outer Rack Rails

Outer rails attach to the server rack and hold the server in place. The outer rails for the StorTrends 3200 chassis extend between 30 inches and 33 inches.

To install the Outer Rack Rails

Steps	Description
1	Begin by measuring the distance from the front rail to the rear rail of the rack.
2	Attach a short bracket to the front side of the right outer rail and a long bracket to the rear side of the right outer rail.
3	Adjust both the short and long brackets to the proper distance so that the rail can fit snugly into the rack.
4	Secure the short bracket to the front side of the outer rail with two M4 screws and the long bracket to the rear side of the outer rail with three M4 screws.
5	Repeat these steps for the left outer rail.

Installing the Chassis into the Server Rack

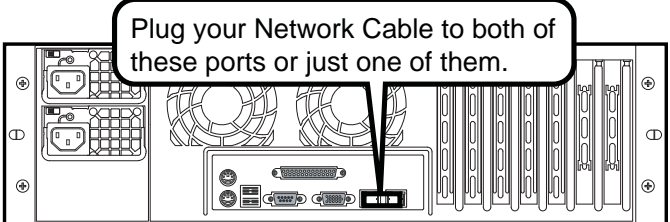
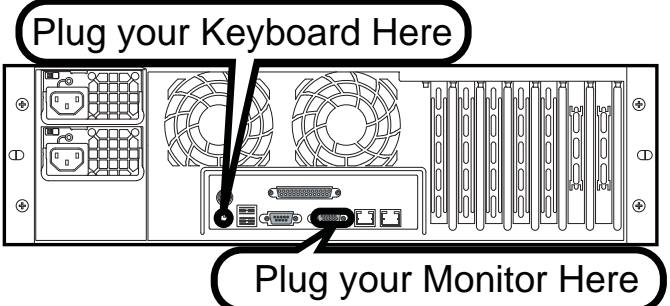
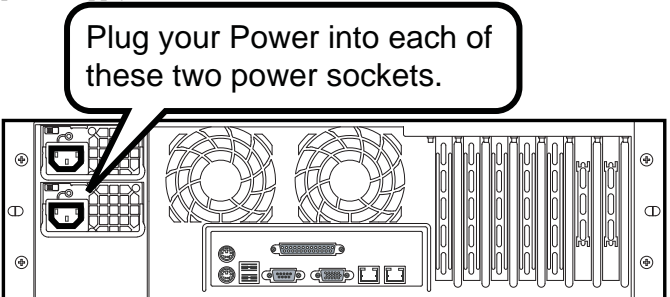
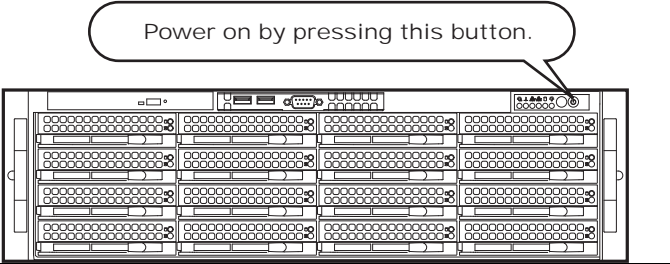


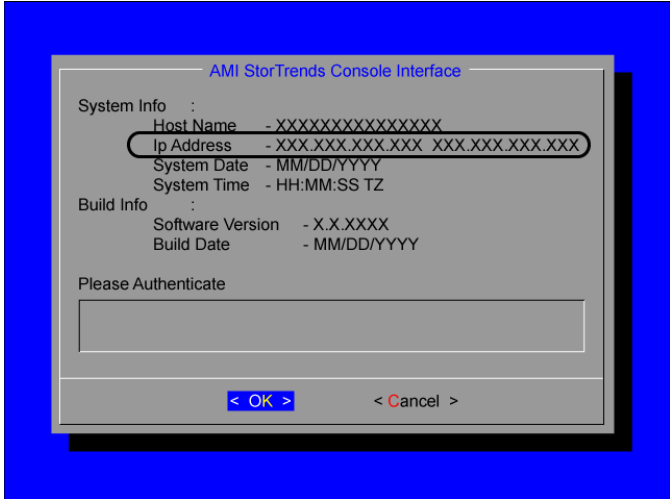
Installing the chassis into a rack

Steps	Description
1	Confirm that the inner and outer rails are installed on the rack.
2	Line chassis rails with the front of the rack rails.
3	Slide the chassis rails into the rack rails, keeping the pressure even on both sides (you may have to depress the locking tabs when inserting). When the server has been pushed completely into the rack, you should hear the locking tabs "click".
4	(Optional) Insert and tightening the thumbscrews that hold the front of the server to the rack.

Completing the Hardware Installation

Next, you should check to make sure that the hard disk drives have been properly inserted and have not come loose in transit.

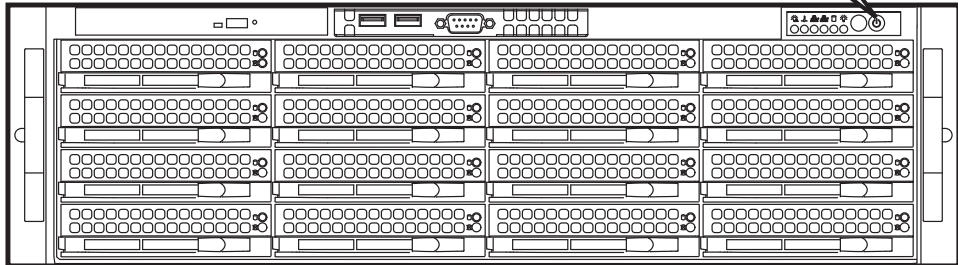
Step	Description
1. Checking the drive bays	All hard disk drives can be accessed from the front of the server. Verify that the hard disk drive trays are inserted all the way into its bay.
2. Check the airflow	Airflow is provided by five high-performance fans. The system component layout was carefully designed to promote sufficient airflow through the 3U rack mount space. Verify that all cables in your rack are not obstructing the chassis's airflow.
3. Connect your network cable(s)	
4. Connect your keyboard and monitor	
5. Supply power to the system	<p>The last thing you must do is to provide input power to the system. Plug the two power cords from the power supply units into a high-quality power strip that offers protection from electrical noise and power surges. It is recommended that you use an uninterruptible power supply (UPS).</p> 
6. Power your system on	
7. Get the IP address	Once the StorTrends® Storage Appliance is fully operational, you will see the following screen. Write down the IP Address listed in the

Step	Description
	<p data-bbox="703 226 1284 279">“Ip Address” field. If you have both NICs connected to your network, there will be two IP Addresses.</p>  <p>The screenshot shows a console window titled "AMI StorTrends Console Interface". It displays system information including Host Name, Ip Address (with two addresses), System Date, System Time, Build Info (Software Version and Build Date), and a "Please Authenticate" prompt with an input field. At the bottom, there are buttons for "< OK >" and "< Cancel >".</p>

Connect to the StorTrends® Appliance

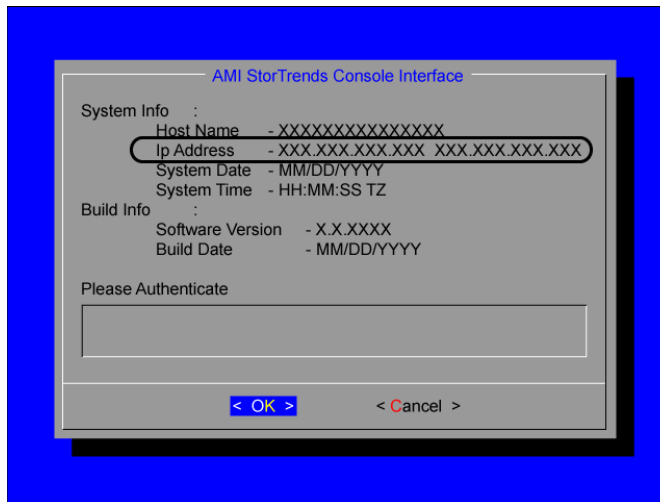
Step One: Power your system on

Power on by pressing this button.



Step Two: Get the IP address

Once the StorTrends® Storage Appliance is fully operational, you will see the following screen. Write down the IP Address listed in the “Ip Address” field. If you have both NICs connected to your network, there will be two IP Addresses.

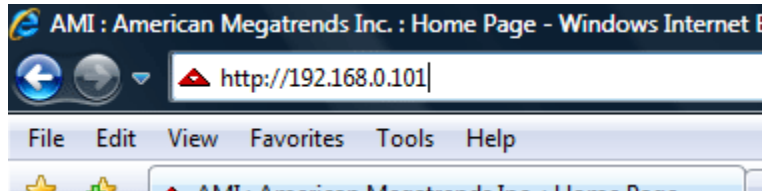


STOP!

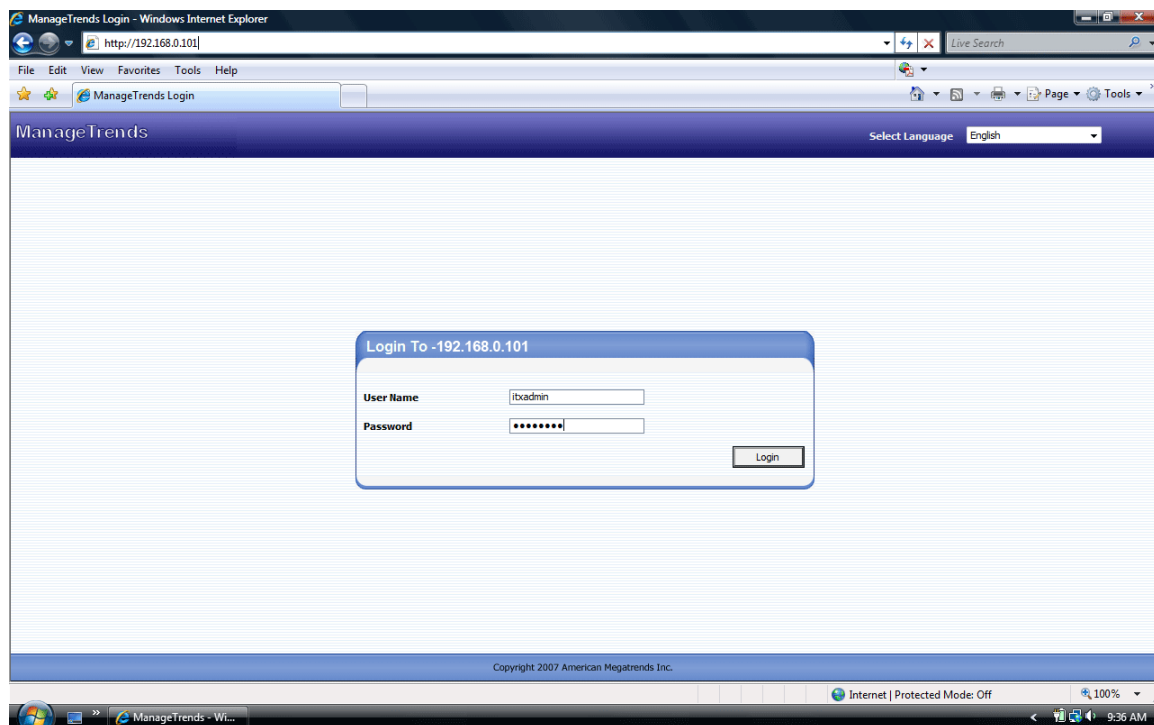
Once again, **WRITE DOWN** the IP Address listed in the “Ip Address” field. Go to **ANOTHER COMPUTER** on the same network to continue with the installation.

Step Three: Connecting to the StorTrends® Storage Appliance from another system

Type the IP Address of the StorTrends® Storage Appliance that you just wrote down into your Internet Browser.



Step Four: Logging on to the StorTrends® Storage Appliance



You will be prompted to provide a username and password before you can gain access to it. Enter your username and password.

Default user name: **itxadmin**
Default password: **password**

Note: When you login using the default **itxadmin** password, you have full administrative powers. It is advised that once you login, you change the password.

Note: Both the user name and password are case sensitive.

Note: StorTrends® iTX has a built in feature that logs you out in the event that it detects no activity for 20 minutes and will display a message that states, “Your session has expired.”

Using the Quick and Easy Setup Wizard

If the storage has not been configured on your StorTrends® iTX Storage Appliance, you will be prompted to run the *Wizard*. The *Quick and Easy Setup Wizard* will get your StorTrends® iTX Storage Appliance up and running in less than five minutes.

STOP!

If you would like more control of these settings, you can enter the *Advanced Setup Wizard*. Jump to the next section for more information on the *Advanced Setup Wizard*.

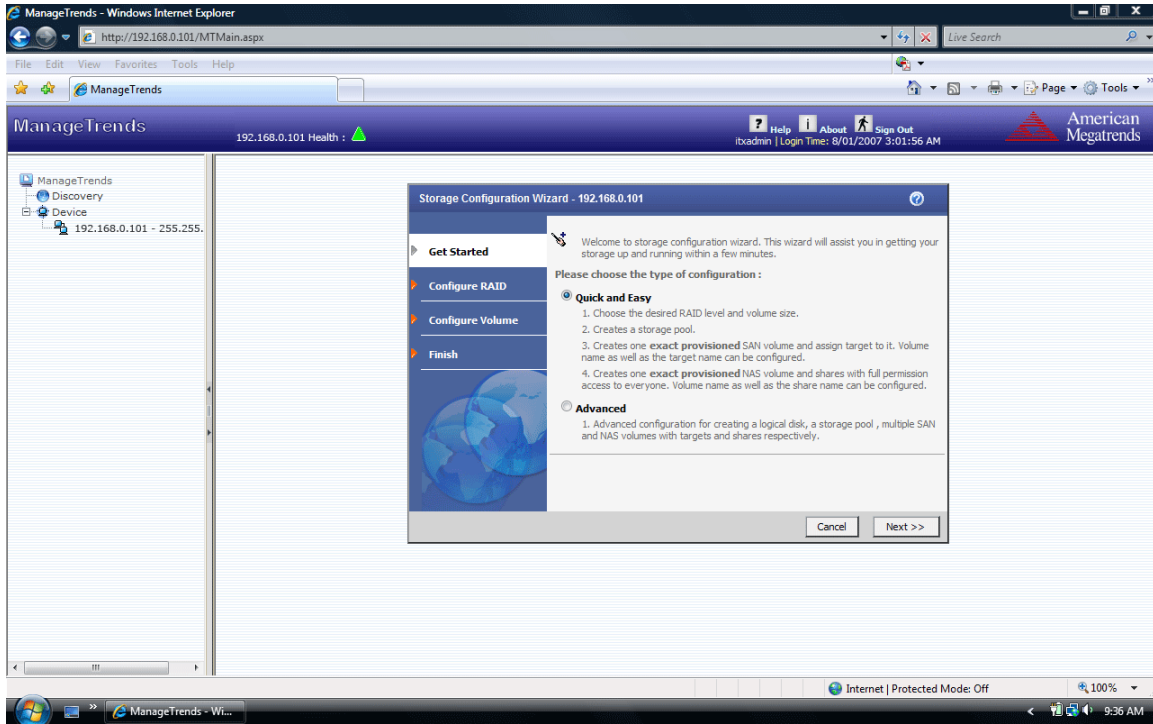
Use the following instructions as a basis.

Note:

The *Quick and Easy Setup Wizard* will select all the physical hard disk drives present in the StorTrends® iTX Storage Appliance to create the RAID array. SAN and NAS volume names are automatically generated. A default *NAS Share* is also automatically created. In the *Quick and Easy Setup Wizard* the SAN and NAS Volumes are configured to use Exact Provisioning. Twenty percent of the physically available hard disk space should be reserved if you are planning to use snapshot storage.

Step One: Quick and Easy Wizard

If the storage has not been configured on your Storage Appliance, you will be prompted to run the *Wizard*. Click the *Quick and Easy* option, and then click *Next*.

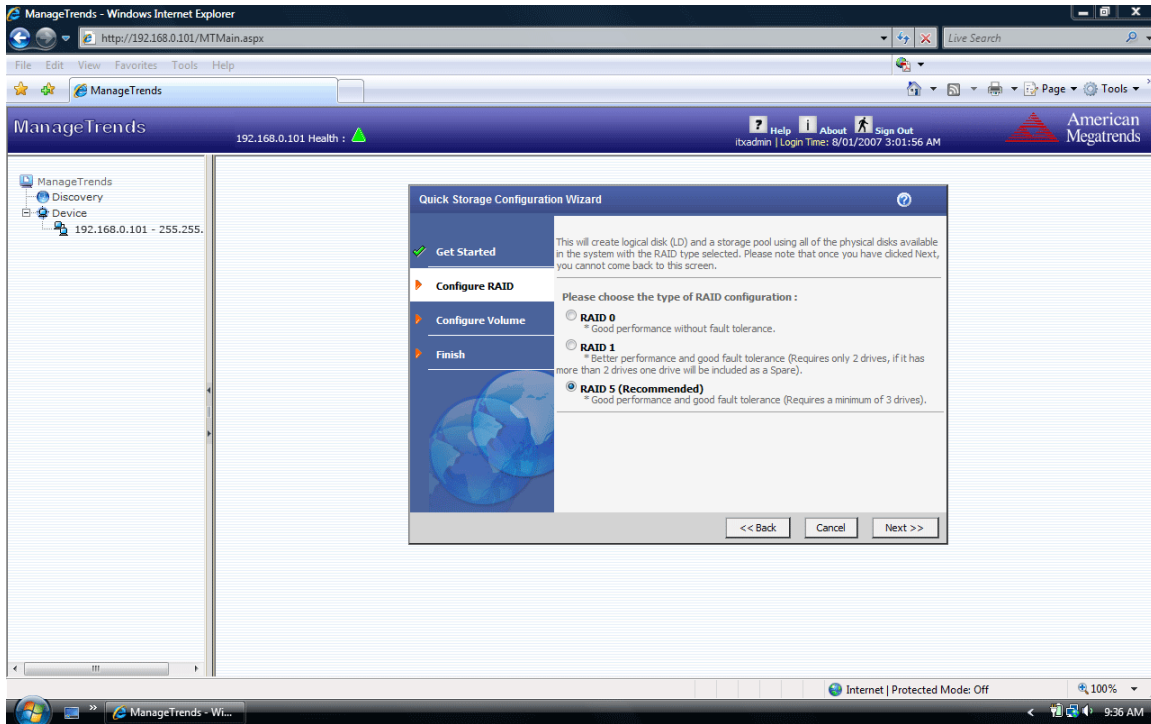


Step Two: RAID Level

Once you initiate the *Quick and Easy Setup Wizard*, you are provided the following options:

- RAID 0
- RAID 1
- RAID 5

This step will create a Logical disk and a storage pool from all the physical hard disk drives available in the system/controller with the RAID type you specify. Once you select *Next*, you cannot come back to this step.



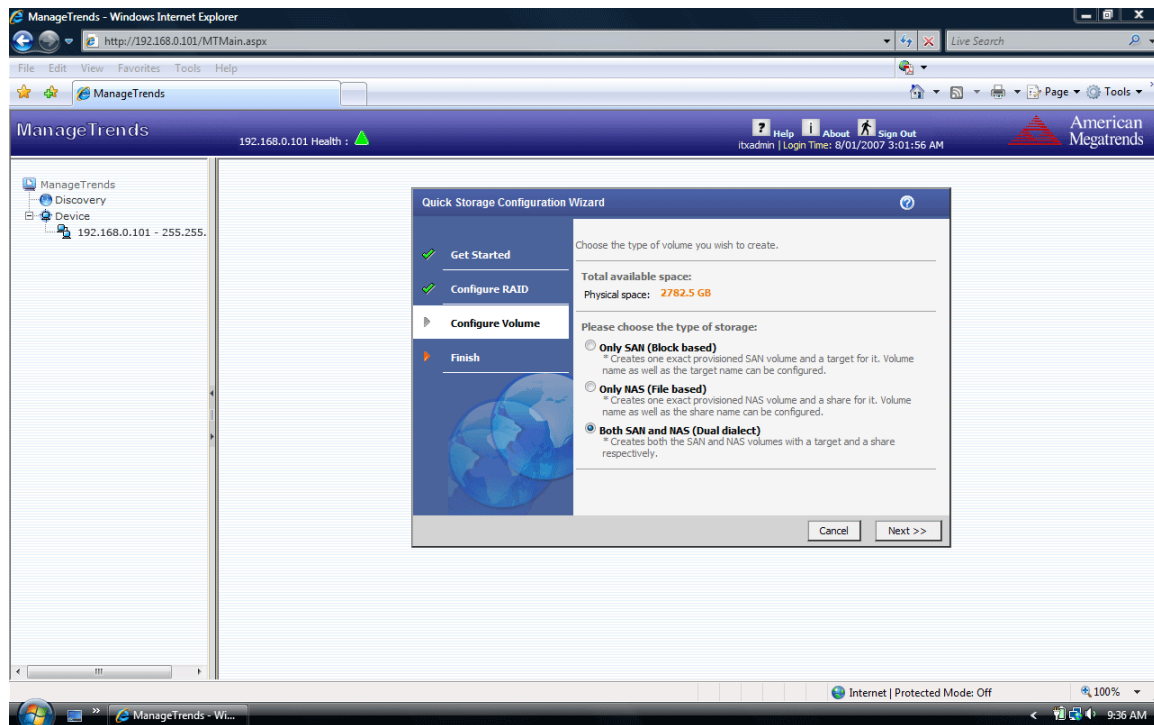
You will be prompted to wait while it configures the box. Do not close the window or click anywhere else.

Step Three: SAN or NAS or Both

Once an array has been created in the box, you can select how you want to use your Storage Appliance. You are provided with the following options:

- Only SAN
- Only NAS
- Both SAN and NAS

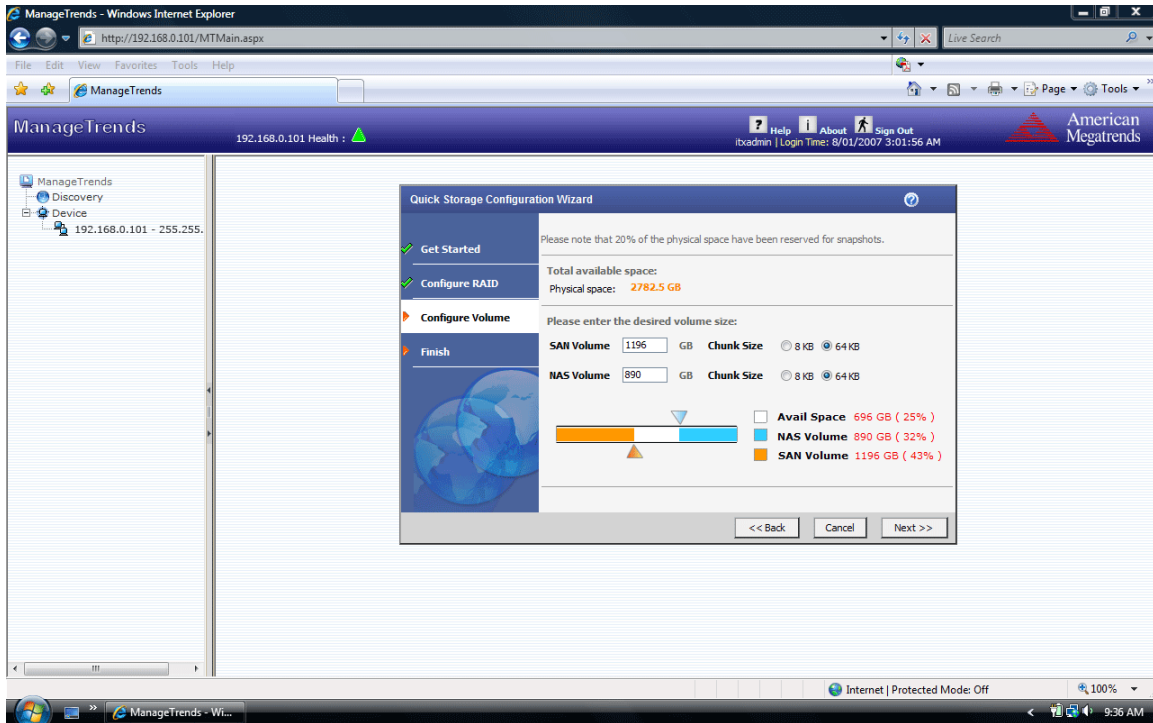
If you want your Storage Appliance to be used for block-level storage only, select *Only SAN*. If you want your Storage Appliance to be used for file-level storage only, select *Only NAS*. Select *Both SAN and NAS* if you want your Storage Appliance to support both block-level and file-level storage.



Step Four: Allocating Space

Enter the size of your desired Volume. The default volumes cannot exceed the available physical space due to the fact that they are both using Exact Provisioning by default. Click *Next*.

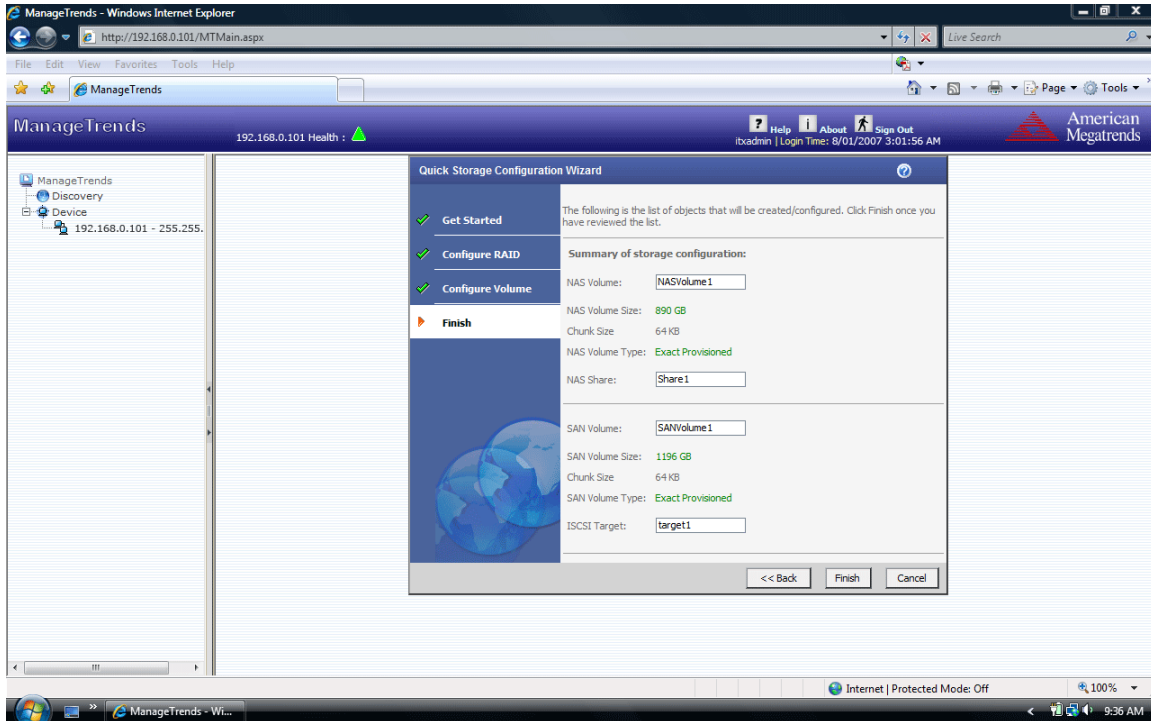
Note: You can use the slider bar to adjust the size of each Volume type. If you have selected *Only NAS* or *Only SAN*, then you will only be able to adjust the slider for that type of Volume.



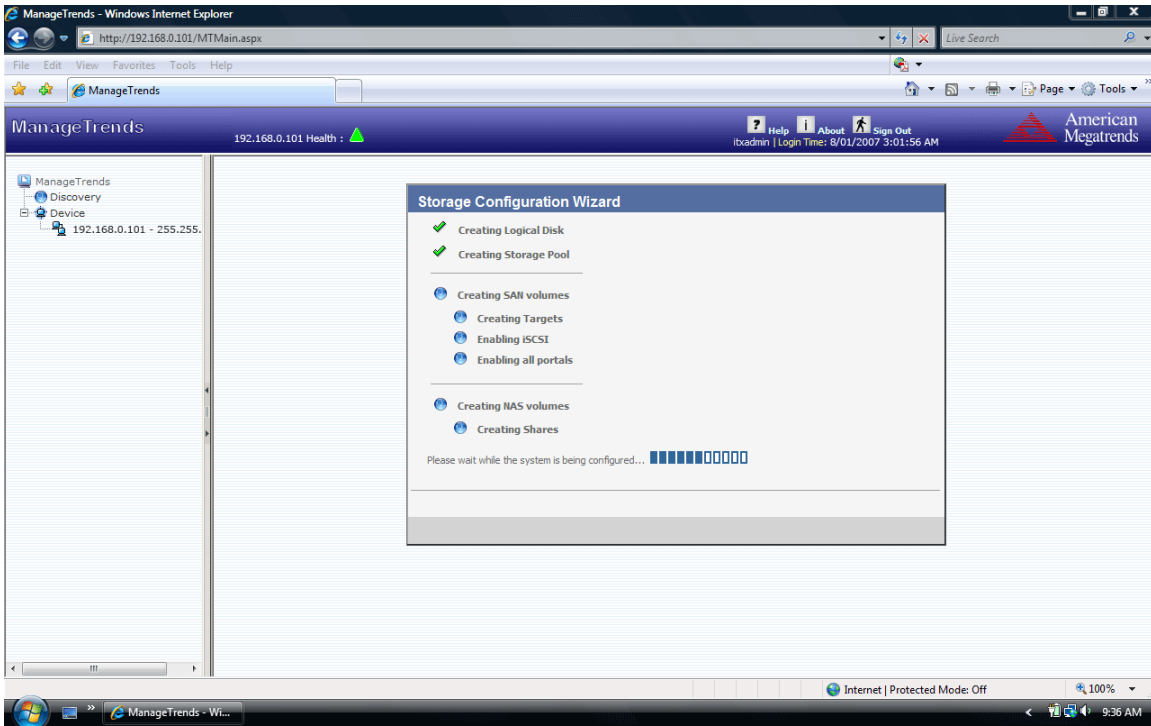
Step Five: Summary View

A summary will appear. Click the *Finish* button. Your Storage Appliance will be automatically configured based on the values that you have entered.

Note: You can change the default names for volumes and containers at this point. Also note that uppercase characters are not allowed in target names. Additionally, if you are planning to use the snap-assisted replication feature, uppercase characters should be avoided in both the container and volume names. Because of this, you must change the default names.



Do not close the window or click anywhere else until the operation completes.



Step Six: All Done No Errors

The screenshot displays the ManageTrends web interface in Internet Explorer. The main content area is titled "Storage Information" and includes a "Storage Wizard" link. It features a "Virtual Space statistics" section with a pie chart showing 2086 GB of used space (0%) and 260058 GB of available space (99%). Below this is a "Storage Pools" table with one entry: StoragePool1 (Capacity: 2782 GB, Used Space: 2086 GB, Available Space: 696 GB, Status: Operational). To the right, there are sections for "SAN Volumes" and "NAS Volumes", each with a table listing volume details. The interface also shows a left-hand navigation menu and a top navigation bar with "Help", "About", and "Sign Out" options.

Capacity	262144 GB
Used Space	2086 GB
Available Space	260058 GB

Name	Capacity	Used Space	Available Space	Status
StoragePool1	2782 GB	2086 GB	696 GB	Operational

Name	Capacity	Used	Available	Type	Provision	Snap Schedule	Status
SANVolume1	1196 GB	0 GB	1196.00 GB	ROW	Exact	Never	Mounted/In use

Name	Capacity	Used	Available	Type	Provision	Snap Schedule	Status
NASVolume1	890 GB	0 GB	889.87 GB	ROW	Exact	Never	Mounted/In use

STOP!

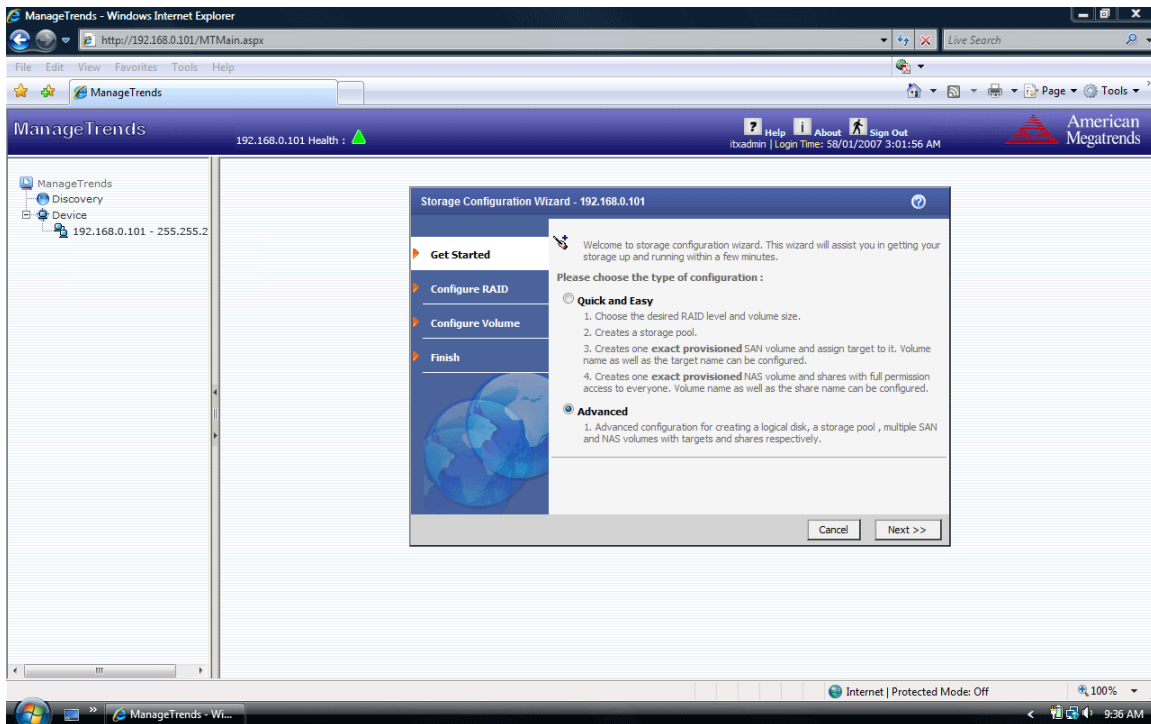
YOU SHOULD NOW BE UP AND RUNNING. ALL THE OTHER SECTIONS CAN BE SKIPPED.

Using the Advanced Setup Wizard

The *Advanced Setup Wizard* allows you to have more control of the storage being configured.

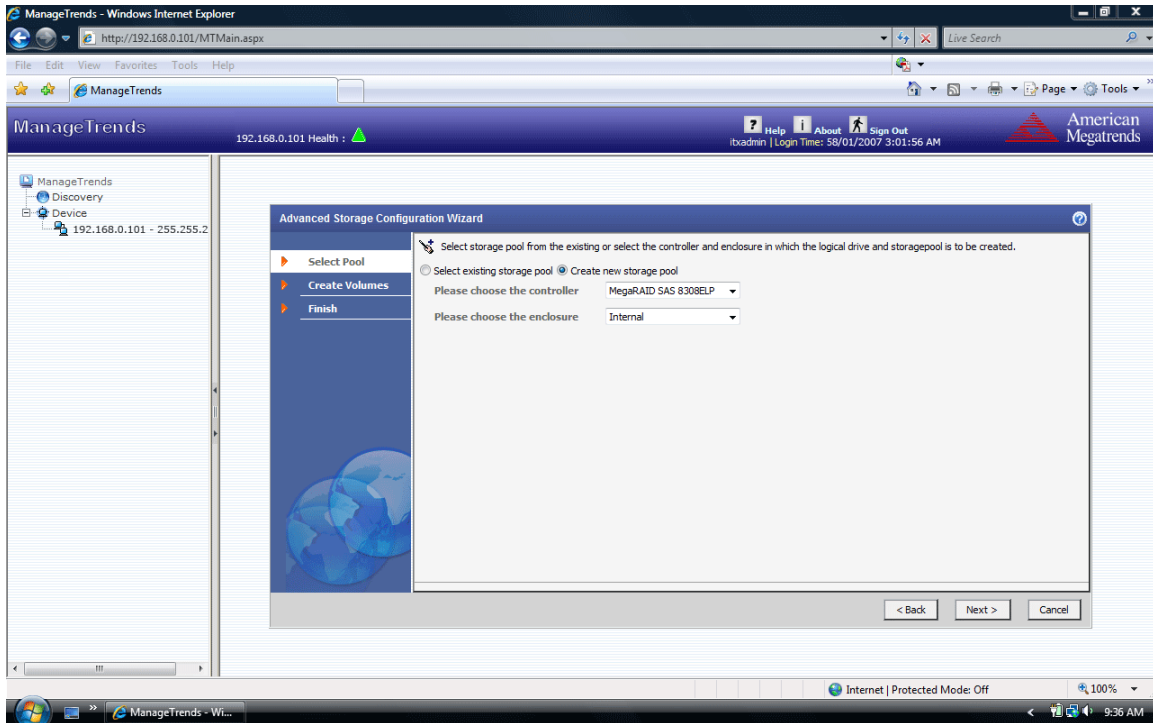
Step One: Advanced Wizard

If the storage has not been configured on your Storage Appliance, you will be prompted to run the *Wizard*. Click the *Advanced* option and then click *Next*.



Step Two: Create a New Storage Pool

Select *Create new storage pool* and then click *Next*.



Step Three: Select Pool

Select the Disks

Select the *Disks* that you want to use in your *Storage Pool*.

The screenshot shows the ManageTrends web interface in Internet Explorer. The 'Advanced Storage Configuration Wizard' is open, displaying the 'Select Pool' step. The wizard title is 'Advanced Storage Configuration Wizard' and the instruction is 'Create new storage pool on which the volumes has to be created in Secondary System.'

The 'Select Pool' step is active, showing a table of available disks:

Disk	Model	Capacity	Available	Status
<input checked="" type="checkbox"/> 1:2	Hitachi	232.00 GB	232.00 GB	Ready
<input type="checkbox"/> 1:5	Hitachi	232.00 GB	232.00 GB	Ready
<input checked="" type="checkbox"/> 1:3	Hitachi	232.00 GB	232.00 GB	Ready
<input checked="" type="checkbox"/> 1:4	Hitachi	232.00 GB	232.00 GB	Ready
<input type="checkbox"/> 1:6	Hitachi	232.00 GB	232.00 GB	Ready

Selected Disk order: 1:2, 1:3, 1:4

RAID level: RAID 0 Organized As: nxm[n array of m disk]

Cache option: Direct Stripe Size: 64KB

Write Cache option: Write Through Read Cache option: Read Ahead None

Spare Type: Dedicated Distributed None

Storage Pool Name: StoragePool1

Navigation buttons: < Back, Next >, Cancel

Set the RAID Levels

Select the *RAID Level*, Capacity, Cache Option type, Stripe Size and Spare type (if applicable).

The screenshot shows the 'Advanced Storage Configuration Wizard' in the ManageTrends web interface. The wizard is in the 'Create Volumes' step, showing a table of disks and RAID configuration options.

Disk	Model	Capacity	Available	Status	
<input checked="" type="checkbox"/>	1:2	Hitachi	232.00 GB	232.00 GB	Ready
<input type="checkbox"/>	1:5	Hitachi	232.00 GB	232.00 GB	Ready
<input checked="" type="checkbox"/>	1:3	Hitachi	232.00 GB	232.00 GB	Ready
<input checked="" type="checkbox"/>	1:4	Hitachi	232.00 GB	232.00 GB	Ready
<input type="checkbox"/>	1:6	Hitachi	232.00 GB	232.00 GB	Ready

Selected Disk order: 1:2, 1:3, 1:4

RAID level: RAID 5 (selected)
Organized As: nxm[n array of m disk]
Cache option: RAID 50 (selected)
Stripe Size: 64 KB
Write Cache option: Read Ahead None
Read Cache option: Read Ahead None
Spare Type: None (selected)
Storage Pool Name: StoragePool1

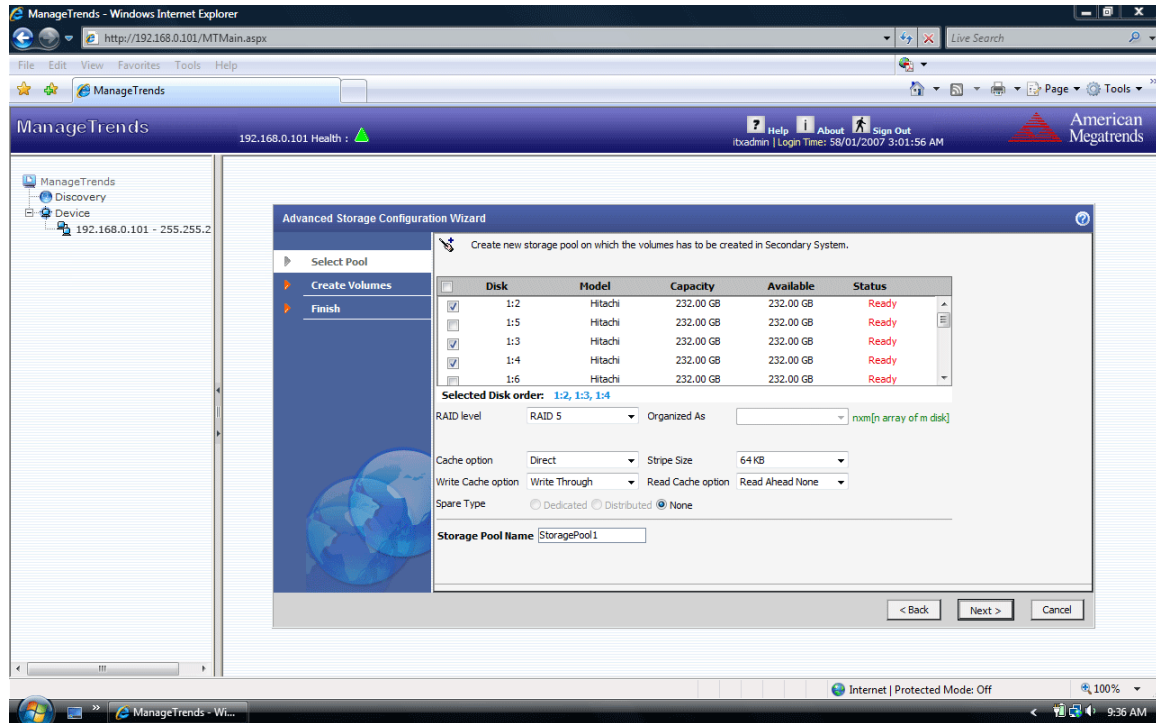
Type in your Storage Pool's name

Type in a *Storage Pool Name*.

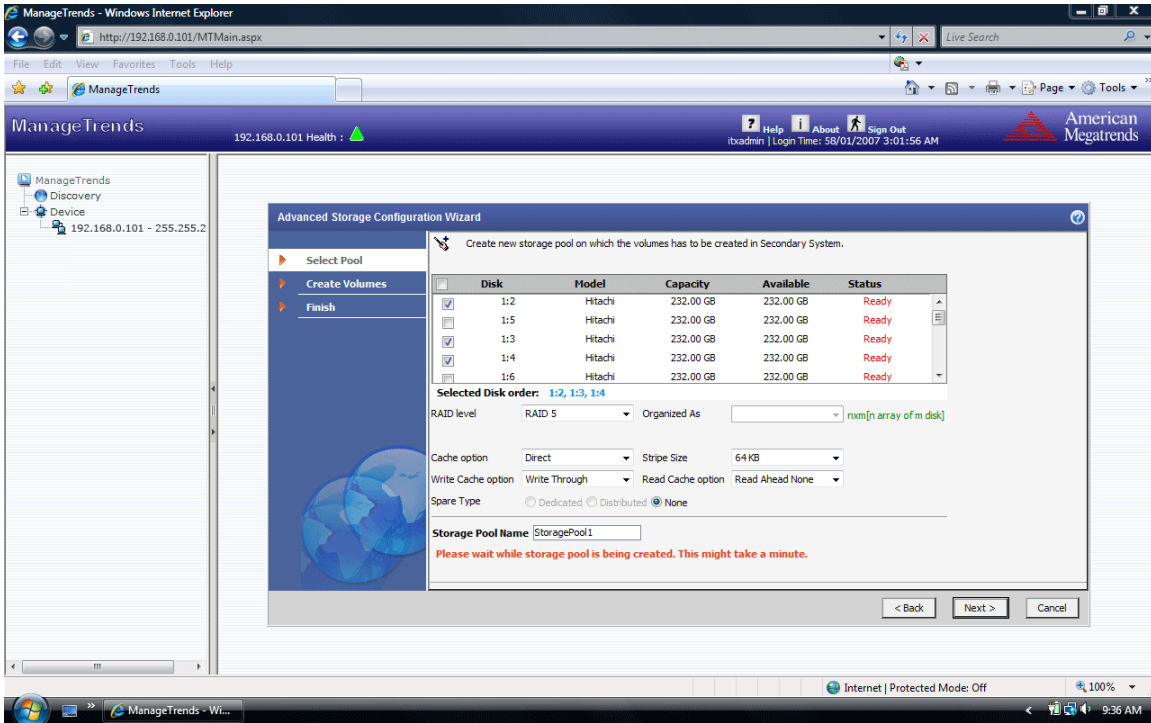
Note: The *Storage Pool Name* must be alphanumeric, not have any spaces and be between one and 63 characters in length.

Note: If you are planning to use the snap-assisted replication feature, uppercase characters should be avoided in container and volume names as well.

Click the *Next* button to continue.



You will be prompted to wait while it configures the box. Do not close the window or click anywhere else.

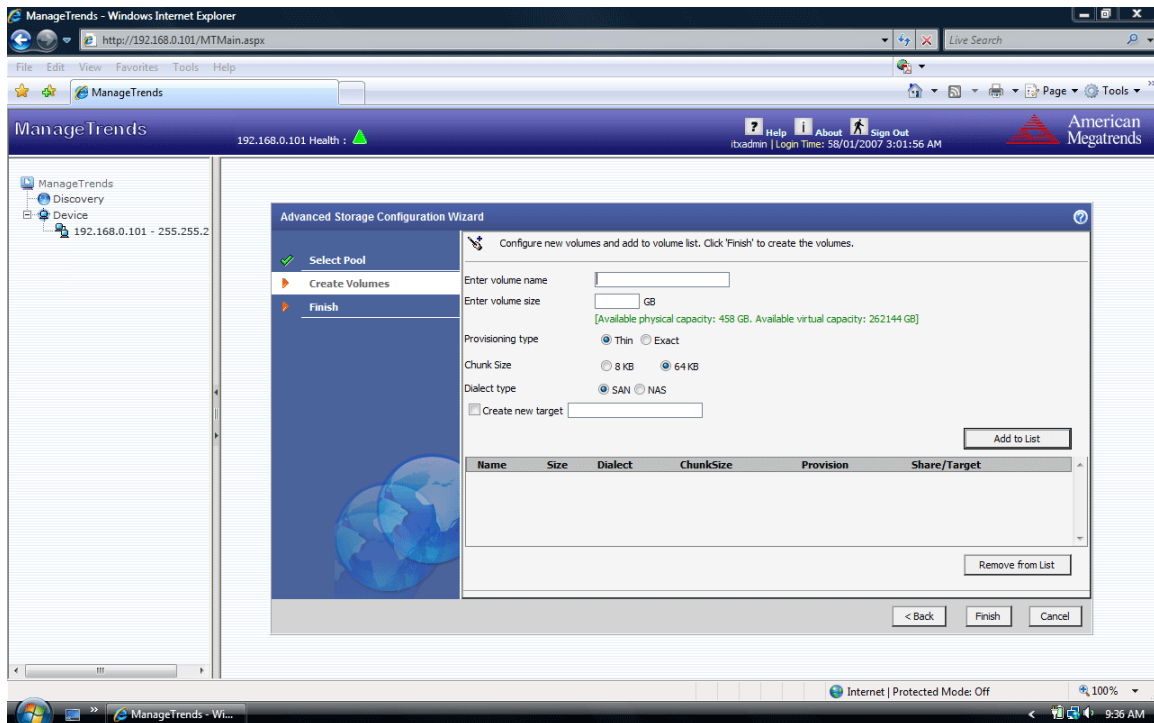


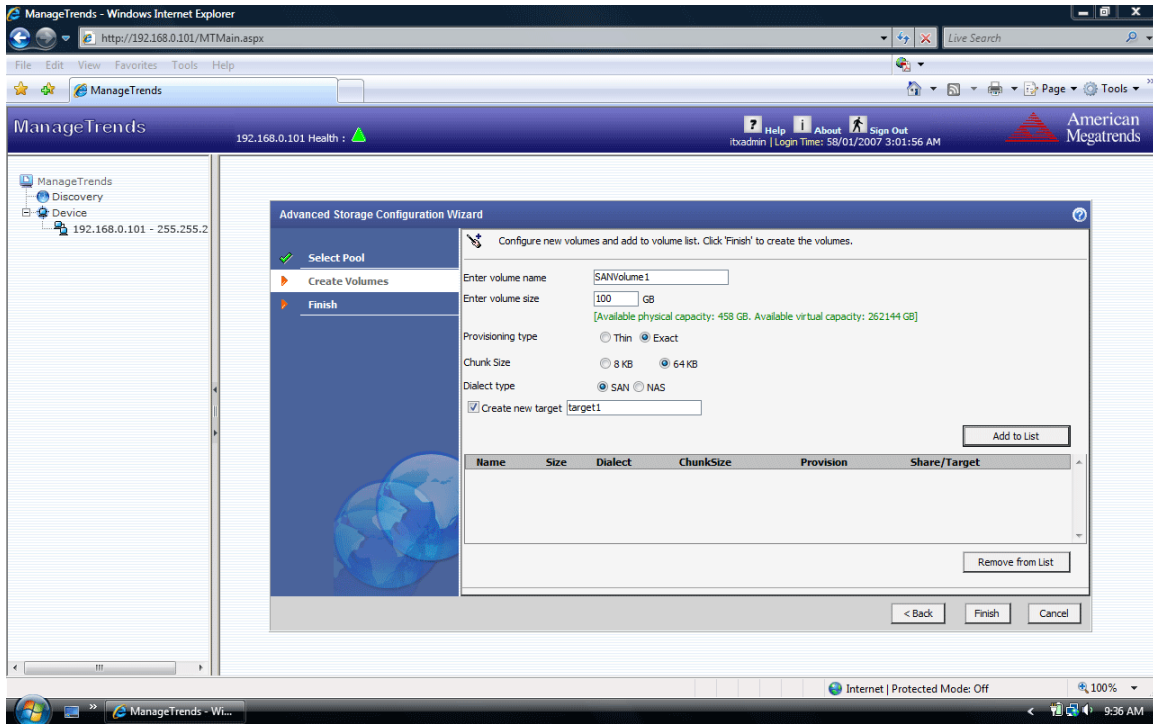
Step Four: Configure SAN Volume

STOP!

This section allows you to configure a SAN Volume and a SAN Target on to the Storage Appliance. If you have configured this storage appliance as a NAS Only unit, SKIP THIS STEP and go to *Step Five: Configure NAS Volume*.

The next page allows you to *Create SAN Volume and Target*.





Enter Volume Name

In the *Enter Volume Name* field, enter a name for your *SAN Volume*. The *SAN Volume Name* must be alphanumeric, not have any spaces and be between one and 63 characters in length.

Enter Volume Size

In the *Enter Volume Size* field, enter the size that you want to use for your *SAN Volume*. The field is measured in Giga-Bytes *GB*.

Select Thin or Exact Provisioning

Select the type of provisioning that you want to use.

If you select *Thin*, the volume can be assigned a size greater than the actual physical size of the storage device. For example, if the storage device has an actual physical size of 500 GB, the user can assign a size of up to 8 TB per box. Based on the consumption of the storage device's physical capacity, more physical drive capacity can be added later as desired.

If you select *Exact*, the volume size cannot exceed the actual physical space available in the storage device.

Note: It is recommended to leave 20% of the physical space free for snapshots.

Select SAN as the Dialect Type

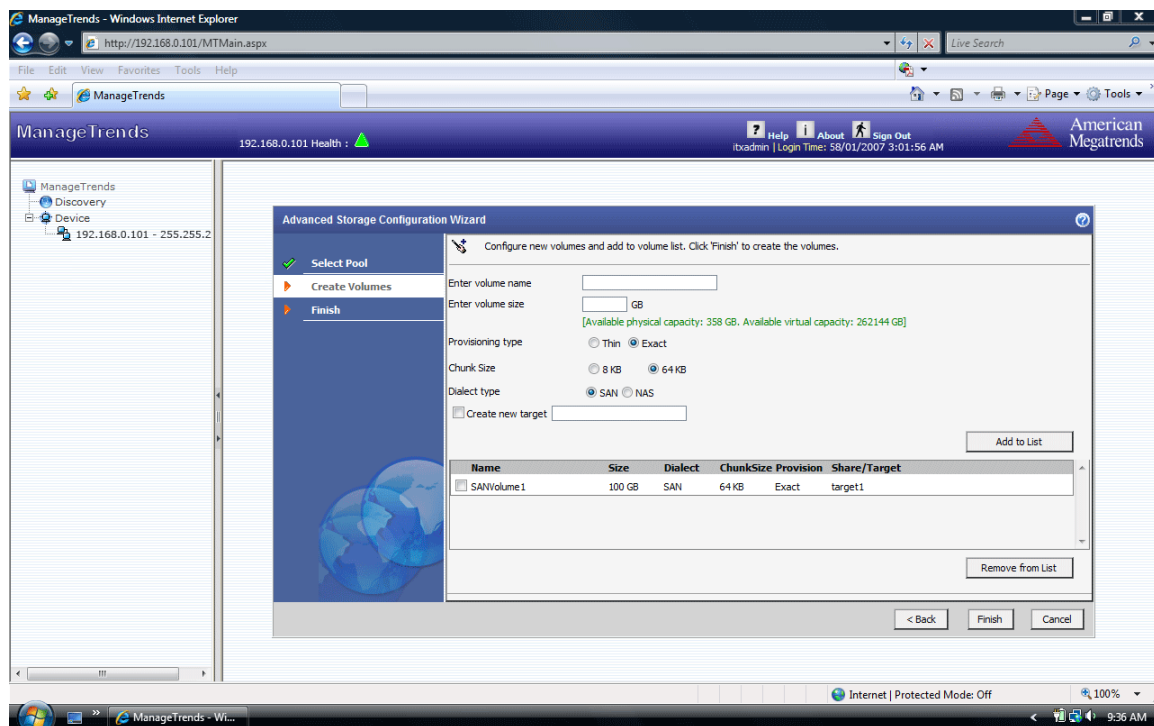
Select *SAN* as the *Dialect Type*.

Create Target and Target Name

Place a check next to the *Create New Target* field. Enter a name for your *Target*. The *Target Name* must be alphanumeric, not have any spaces and be between one and 63 characters in length. Uppercase characters are not allowed in target names.

Note: If you are planning to use the snap-assisted replication feature, uppercase characters should be avoided in both the *Container* and *Volume* names as well

Click the *Add* button to continue.

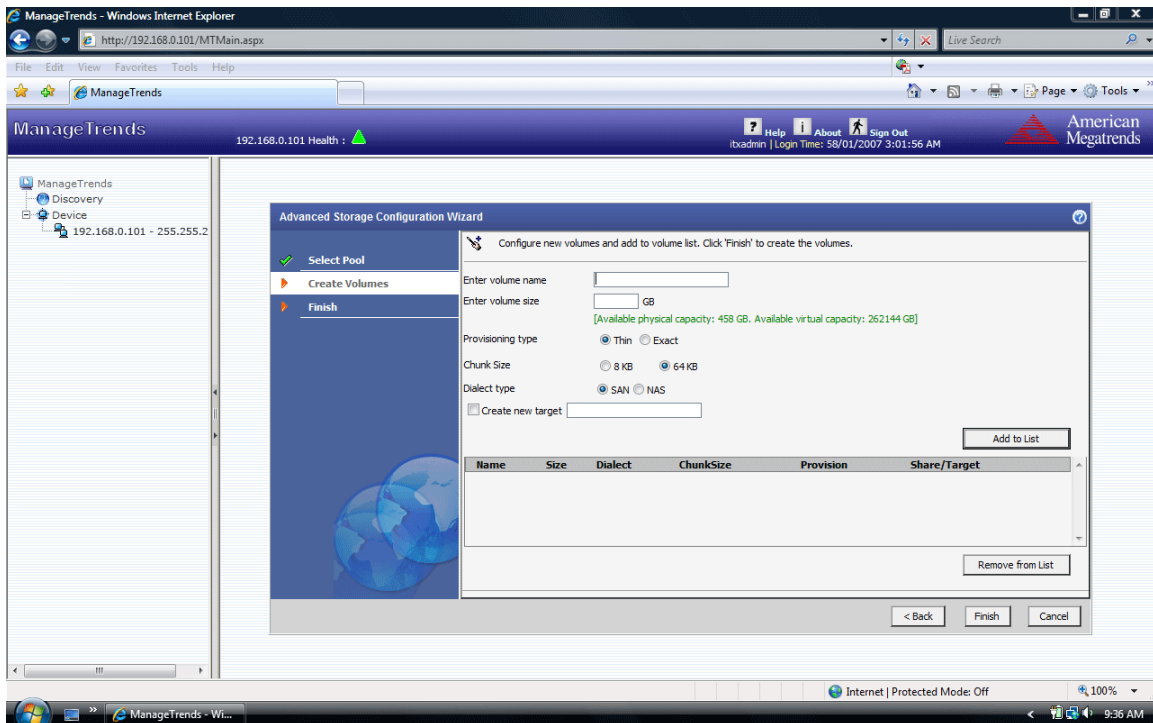


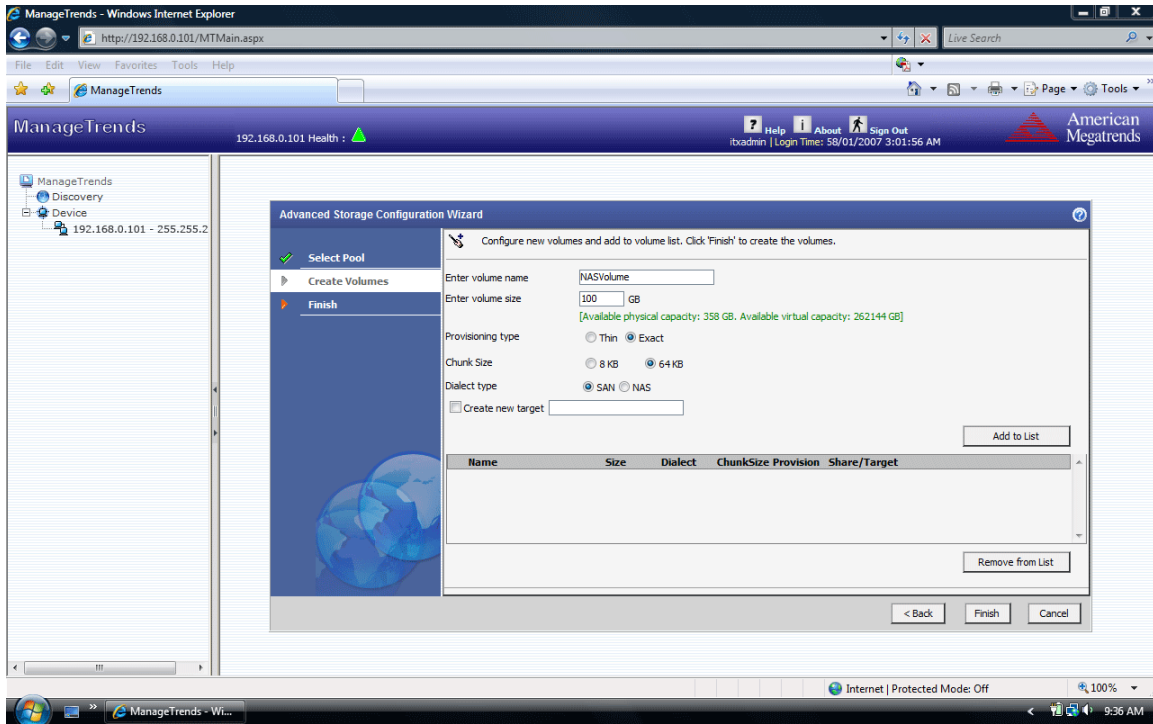
Step Five: Configure NAS Volume

STOP!

This section allows you to configure a NAS Volume and a NAS Share on to the Storage Appliance. If you only want to configure this storage appliance as a SAN Only unit, **SKIP THIS STEP** by clicking the *Finish* button and go to *Step Six: Summary View and Status*.

The next page allows you to *Create NAS Volume and Share*.





Enter Volume Name

In the *Enter Volume Name* field, enter a name for your *NAS Volume*. The *NAS Volume Name* must be alphanumeric, not have any spaces and be between one and 63 characters in length.

Enter Volume Size

In the *Enter Volume Size* field, enter the size that you want to use for your *NAS Volume*. The field is measured in Giga-Bytes *GB*.

Select Thin or Exact Provisioning

Select the type of provisioning that you want to use.

If you select *Thin*, the volume can be assigned a size greater than the actual physical size of the storage device. For example, if the storage device has an actual physical size of 500 GB, the user can assign a size of up to 8 TB per box. Based on the consumption of the storage device's physical capacity, more physical drive capacity can be added later as desired.

If you select *Exact*, the volume size cannot exceed the actual physical space available in the storage device.

Note: It is recommended to leave 20% of the physical space free for snapshots.

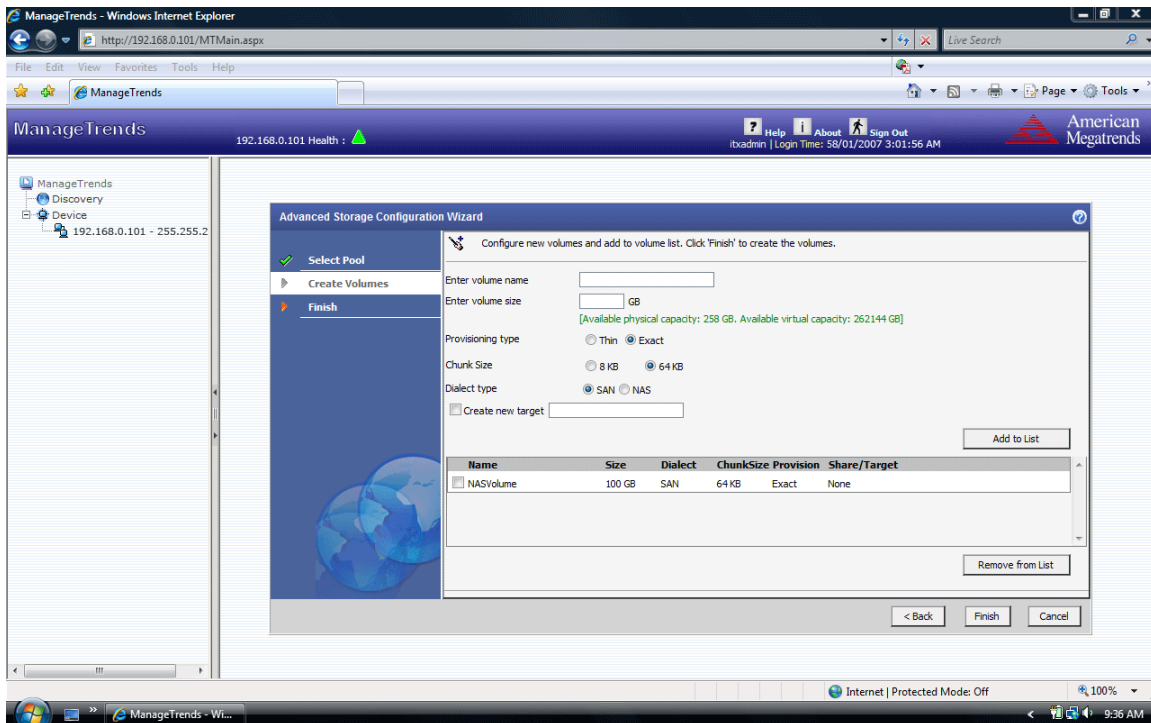
Select NAS as the Dialect Type

Select *NAS* as the *Dialect Type*.

Create Share and Share Name

Place a check next to *Create New Share* if you wish to create a *NAS Share* at this time, otherwise click the *Add* button and continue on to the next step. If you want to create a *NAS Share* now, in the *Share Name* field, enter a unique name for your *NAS Share*. The *NAS Share Name* must be alphanumeric and be between one and 63 characters in length. If you want to use spaces be sure to use quotation marks around the entire name you type in.

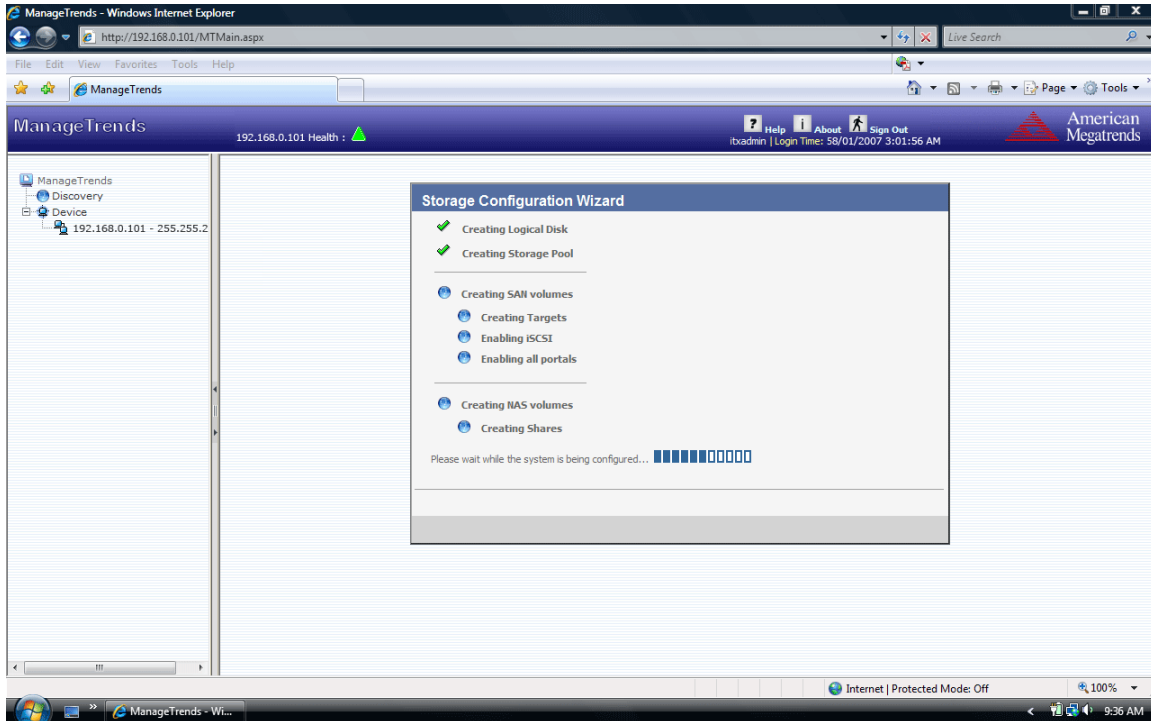
Click the *Add* button to continue.



Step Six: Summary View and Status

When you are finished adding your *Volumes*, click the *Finish* button.

A summary will appear. Your Storage Appliance will be automatically configured based on the values that you have entered.



Do not close the window or click anywhere else until the operation completes.

Step Seven: All Done No Errors

The screenshot displays the ManageTrends web interface in a Windows Internet Explorer browser. The address bar shows the URL <http://192.168.0.101/MTMain.aspx>. The page title is "ManageTrends" and the status bar indicates "192.168.0.101 Health: ▲". The user is logged in as "itxadmin" with a login time of "8/01/2007 3:01:56 AM".

The main content area is titled "Storage Wizard" and "Storage Information". It features a "Virtual Space statistics" section with a pie chart showing "Used Space" at 2086 GB (0%) and "Available Space" at 260058 GB (99%). A summary table shows:

Metric	Value
Capacity	262144 GB
Used Space	2086 GB
Available Space	260058 GB

Below this is a "Storage Pools" section with a table:

Name	Capacity	Used Space	Available Space	Status
StoragePool1	2782 GB	2086 GB	696 GB	Operational

There are also two volume sections: "SAN Volumes" and "NAS Volumes", each with a table of details.

The "SAN Volumes" table:

Name	Capacity	Used	Available	Type	Provision	Snap Schedule	Status
SANVolume1	1196 GB	0 GB	1196.00 GB	ROW	Exact	Never	Mounted/In use

The "NAS Volumes" table:

Name	Capacity	Used	Available	Type	Provision	Snap Schedule	Status
NASVolume1	890 GB	0 GB	889.87 GB	ROW	Exact	Never	Mounted/In use

The interface also includes a left-hand navigation menu with options like "Event Log", "Control Panel", "RAID Management", "Storage", "Shares", "Targets", "Journals", "Replication", "SRM", "Space Utilization", "Volume Performance", "Information Life Cycle", "Container Management", "System Performance", "IO Performance", and "Disk Performance".

STOP!

YOU SHOULD NOW BE UP AND RUNNING.